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EXAMINER	
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1639	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/084,892	CHAKRAVARTI, SHUKTI	
	Examiner	Art Unit	
	SUE LIU	1639	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 September 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *56-68* is/are pending in the application.

4a) Of the above claim(s) *58,62 and 63* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *56, 57, 59-61 and 64-68* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/9/07 has been entered.

Claim Status

2. Claims 1-55 have been canceled as filed on 11/09/07.

Claims 56-68 are currently pending.

Claims 58, 62 and 63 have been withdrawn.

Claims 56, 57, 59-61 and 64-68 are being examined in this application.

Election/Restrictions

3. Applicant's election with traverse of the following species:

A.) GRO1 (SEQ ID NO:2)

in the reply filed on 9/24/08 is acknowledged. The traversal is on the ground(s) that there is "no undue burden exist to search the other species". This is not found persuasive because the different species of nucleic acid sequences (or different genes) are structurally different from each other. There is nothing on record to show the different genes share core structures and/or

functions, or exhibit overlapping sequences. Separate searches in for each species of gene must be conducted. Therefore the different species represent patentably distinct subject matter and there is an undue search burden. Accordingly, Claims 58, 62 and 63 are withdrawn due to non-elected species.

Priority

4. This application is a CIP of 09/694,758 (filed on 10/23/2000), which claims priority to provisional applications 60/160,835 (filed on 10/21/1999).

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Written Description Rejection

6. Claims 56, 57, 59 and 64-68 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The previous rejection over Claims 29 and 30 is moot due to applicant's cancellation of the said claims.

The instant claims recite "An array for diagnosing ulcerative colitis (UC) in a subject comprising: (a) a nucleic acid probe for determining an expression level of a melanoma growth stimulatory activity (GRO1) gene product or a SLC26A2 gene product in a sample from said subject; and (b) a substrate to which said nucleic acid probe is bound, wherein an increase in the expression level of said GRO1 gene product or a decrease in the expression level of said SLC26A2 gene product in said sample relative to the expression level of the same gene product in normal tissue indicates that said subject has UC."

To satisfy the written description requirement, applicants may convey reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention.

Applicants may show possession of an invention by disclosure of drawings or structural chemical formulas that are sufficiently detailed to show that applicant was in possession of the claimed invention as a whole. See, e.g., Vas-Cath, 935 F.2d at 1565, 19 USPQ2d at 1118.

The written description requirement of 35 U.SC. 112 exists independently of enablement requirement, and the requirement applies whether or not the case involves questions of priority. The requirement applies to all inventions and includes chemical inventions. The fact that the patent is directed to method entailing use of compounds, rather than to compounds per se, does not remove patentee's obligation to provide a description of the compound sufficient to distinguish infringing methods from non-infringing methods. See Univ. of Rochester v. G.D. Searle & Co., 358 F.3d 916, 920-23, 69 USPQ 2d 1886, 1890-93 (Fed. Cir. 2004).

With regard to the description requirement, applicants' attention is invited to consider the decision of the Court of Appeals for the Federal Circuit, which holds that a "written description of an invention involving a chemical genus, like a description of a chemical species, 'requires a precise definition, such as by structure, formula [or] chemical name,' of the claimed subject matter sufficient to distinguish it form other materials." University of California v. Eli Lilly and Co., 43 USPQ2d 1398, 1405 (1997), quoting Fiers v. Revel, 25 USPQ2d 1601, 1606 (Fed. Cir. 1993) (bracketed material in original) [The claims at issue in University of California v. Eli Lilly defined the invention by function of the claimed DNA (encoding insulin)].

The written description requirement for a claimed genus may be satisfied through sufficient description of a representative number of species or by actual reduction to practice, reduction to drawings, or by disclosure of relevant, identifying characteristics, i.e., structure or other physical an/or chemical properties, by functional characteristics coupled with a known or disclosed correlation between function and structure, or by a combination of such identifying characteristics, sufficient to show the applicant was in possession of the claimed genus. See Eli Lilly, 119 F. 3d at 1568, 43 USPQ2d at 1406.

The instant claims are drawn to an array comprising various nucleic acid probes, which are used to determine the gene expression level of at least one gene in a sample. The instant specification defines the term Microarray as "an array of distinct polynucleotides or oligonucleotides synthesized on a substrate..." (para. [0070]), which is interpreted to mean that the DNA microarray contains nucleic acids with defined sequences. However, neither the instant specification nor the claims specifically recite nucleic acid probes that constitute the claimed array. Claim 27 recites an array comprising nucleic acid probes for determining an expression level of GRO1 gene. The said "nucleic acid probes" could be different DNA molecules such as cDNA of the claimed genes, or short oligomers that are complementary to either the coding strand or the complement strand. The probes could also contain mutations relative to the wildtype gene sequences. The probes could even be complements to genes that regulate the said gene. In addition, the probes could also have various lengths or sequence segment within the claimed gene sequence. These different variables together would create almost infinite combinations of different probes that could be encompassed by the claimed array of the probes. Thus, the instant claim 56 is drawn to a genus of nucleic acid probes with various structures. One skilled in the art would not be able to envision that the applicants' had possession of the recited invention as described. It is unclear as to what portion(s) of the gene sequences are used, or suitable for the said probes for the array.

Neither the instant specification nor the instant claims provides representative numbers of species of the claimed nucleic acid probes, or provides a common core structure for the claimed nucleic acid probes.

To provide evidence of possession of a claimed genus, the specification must provide sufficient distinguishing identifying characteristics of the genus. The factors to be considered include disclosure of complete or partial structure, physical and/or chemical properties, functional characteristics, structure/function correlation, methods of making the claimed product, or any combination thereof. (see MPEP 2163 II).

In addition, the Court of Appeals for the Federal Circuit, our reviewing court, has addressed the issue of what constitutes adequate written description for a claim drawn to a nucleic acid. In Enzo Biochem, Inc. v. Gen-Probe Inc., 296 F.3d 1316, 63 USPQ2d 1602 (Fed. Cir. 2002), the court adopted a portion of the Guidelines proffered by the United States Patent and Trademark Office (USPTO). The court stated that:

> The written description requirement can be met by "showing that an invention is complete by disclosure of sufficiently detailed, relevant identifying characteristics . . . i.e., complete or partial structure, other physical and/or chemical properties, functional characteristics when coupled with a known or disclosed correlation between function and structure, or some combination of characteristics.
> Enzo Biochem, 296 F.3d at 1324, 63 USPQ2d at 1613 (citations omitted).

The court also addressed the issue of what constitutes adequate written description of a claim to a broad genus of sequences. In The Regents of The University of California v. Eli Lilly and Co., 119 F.3d 1559, 43 USPQ2d 1398 (Fed. Cir. 1998), the court determined that the disclosure of rat cDNA did not provide adequate written description support for claims drawn to mammalian and vertebrate DNA. Eli Lilly, 119 F.3d at 1567-68, 43 USPQ2d at 1405. The court stated:

> In claims to genetic material, however, a generic statement such as "vertebrate insulin cDNA" or "mammalian insulin cDNA," without more, is not an adequate written description of the genus because it does not distinguish the claimed genus from others, except by function. It does not specifically define any of the genes that fall within its definition. It does not define any structural features commonly possessed by members of the genus that distinguish them from others. One skilled in the art therefore cannot, as one can do with a fully described genus, visualize or recognize the identity of the members of the genus. A definition by function, as we have

> previously indicated, does not suffice to define the genus because it is only an indication of what the gene does, rather than what it is.
> Eli Lilly, 119 F.3d at 1568, 43 USPQ2d at 1406.

In Enzo-Biochem, the court refined the approach advanced by Eli Lilly, adopting an example offered in the USPTO guidelines having facts that contrasted with those of Eli Lilly, wherein the written description requirement would be met. Thus, adequate written description may be present for a genus of nucleic acids based on their hybridization properties, "if they hybridize under highly stringent conditions to known sequences because such conditions dictate that all species within the genus will be structurally similar." Enzo Biochem, 296 F.3d at 1327, 63 USPQ2d at 1615.

Here, Applicants fail to claim probes that hybridize under "stringent" conditions. Thus, the current claims encompass a myriad of probes that are not "structurally similar." This would include virtually an infinite number of possibilities. In contrast, Applicants' specification does not even disclose a single working example of a specific nucleic acid probe that can be used on an array for detecting sample gene expression. This also would lead to a target that could potentially bind to numerous "low affinity" probes.

As discussed above, the skilled artisan cannot envision the nucleic acid probes that constitute the said array. Regardless of the complexity or simplicity of the method of creating such composition, adequate written description requires more than a mere statement that it is part of the invention and reference to a possibility of creating it. The composition itself is required.

Discussion and Answer to Argument

7. Applicant's arguments have been fully considered but they are not persuasive for the following reasons (in addition to reasons of record). Each point of applicant's traversal is addressed below (applicant's arguments are in italic):

Applicants argue the amended claims over come the above rejection. (Reply entered 7/16/07, p.5).

Applicants are respectfully directed to the above modified rejections for detailed discussion.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(Note: the instant claim numbers are in bold font.)

Heller

9. Claims **56, 57, 59** and **64-68** are rejected under **35 U.S.C. 102(b)** as being anticipated by **Heller** et al (PNAS. Vol.94: 2150-2155; 1997; cited previously).

The instant claims recite "An array for diagnosing ulcerative colitis (UC) in a subject comprising: (a) a nucleic acid probe for determining an expression level of a melanoma growth stimulatory activity (GRO1) gene product or a SLC26A2 gene product in a sample from said subject; and (b) a substrate to which said nucleic acid probe is bound, wherein an increase in the

expression level of said GRO1 gene product or a decrease in the expression level of said SLC26A2 gene product in said sample relative to the expression level of the same gene product in normal tissue indicates that said subject has UC."

The above underlined regions of the instant claim 56 are recitations of intended uses of the instant claimed product of "an array".

Heller et al, throughout the publication, teach using microarray to detect various gene expression including the expression of GRO 1(or GRO α) (e.g. Abstract), which the microarray reads on the array of **clm 56**. Heller et al disclose a 96 gene micro array design (i.e., see the results section, page 2151 and fig.1) and 1046 element array. The reference micro-array comprises probes from following genes Il-6, Il-8, GH1, Gro1, MIP, stromelysin 1, which the probes of Gro1 reads on the nucleic acid probes of **clm 56**. The reference also teaches immobilizing the nucleic acid probes to glass slides (e.g. p.2150, left col.), which the glass slide read on the substrate of **clms 56** and **64**. The reference also teaches the cDNA for the various genes are sequenced and compared to known database (e.g. p.2154).

As discussed above, the underlined regions of **clm 56** as well as the recitations of **clms 57** and **59** are recitations of intended uses.

A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

The reference teaches the microarray containing probes for Gro1 gene can be used to monitor the expression level of Gro1 gene, and thus demonstrating the microarray of the reference is capable of performing the intended use.

The reference also teaches printing the probes onto the glass slide (e.g. p.2150, left col.), which inherently requires covalent or hydrophobic interaction between the probes and the substrate as recited in **clm 65**.

The microarray of the reference is a two dimensional array as indicated in Figure 2 of the reference, which reads on the array of **clm 66**.

The reference also teaches fluorescently labeling probes (e.g. p.2153, right col.), which read on the labeling of **clms 67** and **68**.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Heller and Lockhart

11. Claims **56, 57, 59-61** and **64-68** are rejected under 35 U.S.C. 103(a) as being unpatentable over Heller et al (PNAS. Vol.94: 2150-2155; 1997; cited previously), in view of Lockhart et al (Nature Biotechnology. Vol.14: 1675-1680; 1996; cited in IDS).

Heller et al, throughout the publication, teach using microarray to detect various gene expression including the expression of GRO 1(or GRO α), as discussed supra. The teaching of

the Heller reference as discussed above is hereby incorporated by reference in its entirety. In addition, the GRO1 gene of the Heller reference inherently possess the gene sequence as recited in SEQ ID NO:2.

Heller et al, do not explicitly teach using short nucleic acid as probes to generate the nucleic acid array as recited in **clms 60** and **61**.

However, **Lockhart** et al, throughout the publication, teach making microarrays comprising oligonucleotides (short nucleic acids) (e.g. Abstract). The reference teaches covalently attach 20-mer oligonucleotides to solid support (e.g. p.1676), which read on the nucleotide length of **clms 60** and **61**. The reference also teaches the designing oligonucleotide probes that are complementary (based on sequence information) to the genes of interest (e.g. p.1676, right; Figure 5). The reference also teaches the advantages of generating such arrays so that simultaneous monitoring of tens of thousands of genes can be carried out (e.g. Abstract) as well as providing improved resolution (e.g. p.1676).

Therefore, it would have been prima facie obvious at the time the invention was made for a person of ordinary skill in the art to generate an array with oligonucleotide probes that specifically hybridize with a particular gene (e.g. GRO1) with short length.

A person of ordinary skill in the art would have been motivated at the time of the invention to design a microarray comprising short oligonucoeotide probes (such as 20-mers) for the GRO1 gene, because Lockhart et al teach the advantages of using short oligonucleotide as probes to provide increased resolution and efficient hybridization assays. In addition, because both the cited references teach DNA microarrays comprising various probes, it would have been obvious to one skilled in the art to substitute one type of probes (cDNA probes) for the other

(oligonucleotide probes) to achieve the predictable result of making a DNA microarray for measuring the expression of genes of interest.

An ordinary skilled artisan would have reasonable expectation of success of achieving such modifications since the method of generating a microarray with specific nucleic acid probes are know in the art such as the one taught by Heller and Lockhart.

Cocks and Heller

12. Claims 56, 57, 59 and 64-68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cocks et al (US 6,607,879; 08/19/2003; Filed on 2/9/1998; cited previously), in view of Heller et al (PNAS. Vol.94: 2150-2155; 1997; cited previously).

Cocks et al teach a microarray comprising cDNAs immobilized on a substrate (See Claims 1 and 2 of the reference), which the cDNAs read on the "nucleic acid probes" of **clm 56**. The reference also teaches probes for measuring expression of GRO2 and GRO3 (see Table 1).

As discussed above, the underlined regions of **clm 56** as well as the recitations of **clms 57** and **59** are recitations of intended uses.

A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim.

In the instant case, the reference teaches that the transcripts (mRNA) used with the array are obtained from various sources such as inflamed samples and noninflamed biological samples from various tissues such as hematopoietic tissues or colon tissues (Col. 7, 1st paragraph and lines 10-25), which read on the samples of **clm 59**. In addition, the reference teaches comparing

the hybridization pattern from diseased and non-diseased samples (Claim 4), which would read on the intended use of the instant **clm 56**. The reference also teaches that the immunopathological condition is Crohn's disease, and/or ulcerative colitis, which read on the UC of **clm 56**. The reference further teaches that transcript levels are preferably at least about 2xhigher in a diseased sample than in the nondiseased sample (Col. 7, lines 22-25), which reads on the intended use of **clm 58**.

Furthermore, the reference teaches that the polynucleotide probes can be synthesized on the surface of the substrate by using covalent bonding to the substrate (Col. 10, lines 20-22, for example), and the substrates used could be chips, membrane, plates, etc. (Col. 10, lines 1-5), which read on the covalent interaction of **clm 65,** 2D matrix of **clm 66,** the substrates of **clm 64**.

The reference also teaches hybridizing labeled polynucleotides to the microarray probes (with fluorescent compounds), which would result in nucleic acid probes with a detectable labe as recited in **clm 67** and **68**.

Cocks et al, do not explicitly teach the microarray comprise probes for the GRO1 gene, as recited in **clm 56**.

However, **Heller** et al, throughout the publication, teach using microarray to detect various gene expression including the expression of GRO 1(or GRO α), as discussed supra. The teaching of the Heller reference as discussed above is hereby incorporated by reference in its entirety. In addition, the Heller reference also teaches the need to monitor the expression level of GRO1 gene because its role in inflammation.

Therefore, it would have been prima facie obvious at the time the invention was made for a person of ordinary skill in the art to generate an array with nucleic acid probes that specifically hybridize with a particular gene (e.g. GRO1).

A person of ordinary skill in the art would have been motivated at the time of the invention to design a microarray comprising probes for the GRO1 gene, because Heller et al teach that the need to monitor genes (such as GRO1) that are associated with inflammation. In addition, because both the cited references teach DNA microarrays comprising various probes for various genes, it would have been obvious to one skilled in the art to substitute one gene probe for the other to achieve the predictable result of making a DNA microarray for measuring the expression of genes of interest.

An ordinary skilled artisan would have reasonable expectation of success of achieving such modifications since the method of generating a microarray with specific nucleic acid probes are know in the art such as the one taught by Cocks et al and the specific gene sequence for the desired marker is also know as taught by Heller et al.

Dieckgraefe and Heller

13. Claims **56, 57, 59-61** and **64-68** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Dieckgraefe** et al (Gastroenterology, vol. 114, no. 4, G3954; April, 1998; cited in IDS 8/12/2002), in view of Heller et al (PNAS. Vol.94: 2150-2155; 1997; cited previously).

Dieckgraefe et al, throughout the publication, disclose characterization of mucosal gene expression in inflammatory bowel disease (IBD) by direct hybridization to massive parallel oligonucleotide arrays (see the entire document), which reads on the array of **clms 56** as well as

the substrate of **clm 64** and **66**. The reference discloses that parallel or high throughput methods of measuring gene expression have been recently developed which allow concurrent measurement of the expression pattern of a large number of genes. The reference discloses the use of Gene chip (refers to the solid support chip and two dimensional matrix of the instant claims) expression monitoring system to examine mucosal gene expression in ulcerative colitis, Crohn's colitis to identify genotypes associated with particular disease. The reference discloses that RNA isolated from the mucosal colonial specimens was used to generate hybridization probes. This reads on the intended use of **clms 56, 57**, and **59**. The reference further discloses that light directed solid phase (refers to the support of the instant claims of **clm 56**) combinatorial chemistry (would refer to covalent bonding of probes to the substrate of **clm 65**) was used to generate oligonucleotide probe arrays (refers to nucleic acid probes of the instant claim array) which provide representation of nearly 7000 human cDNA and EST sequences, which reads on the probes specifically hybridize to the gene products of **clm 56**. The reference also teaches using 25-mer oligos, which reads on the length of **clms 60** and **61**. The reference further discloses that hybridization to the oligonucleotide arrays was sensitive, specific and reproducible.

Dieckgraefe et al do not specifically teach probes for GRO1 gene as recited in **clm 56** as well as labeling the nucleic acid probes as recited in **clms 67** and **68**.

However, **Heller** et al, throughout the publication, teach using microarray to detect various gene expression including the expression of GRO 1(or GRO α), as discussed supra. The reference also teaches fluorescently labeling probes (e.g. p.2153, right col.).

Therefore, it would have been prima facie obvious at the time the invention was made for a person of ordinary skill in the art to generate an array with nucleic acid probes that specifically hybridize with a particular gene (e.g. GRO1).

A person of ordinary skill in the art would have been motivated at the time of the invention to design a microarray comprising probes for the GRO1 gene, because Heller et al teach that the need to monitor genes (such as GRO1) that are associated with inflammation. In addition, because both the cited references teach DNA microarrays comprising various probes for various genes, it would have been obvious to one skilled in the art to substitute one gene probe for the other to achieve the predictable result of making a DNA microarray for measuring the expression of genes of interest.

An ordinary skilled artisan would have reasonable expectation of success of achieving such modifications since the method of generating a microarray with specific nucleic acid probes are know in the art such as the one taught by Diechkgraefe et al and the specific gene sequence for the desired marker is also know as taught by Heller et al.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sue Liu whose telephone number is 571-272-5539. The examiner can normally be reached on M-F 9am-3pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Low can be reached at 571-272-0951. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/SUE LIU/
Patent Examiner, Art Unit 1639
12/11/08